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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/597,549	06/19/2000	Juris Sulcs	ADV B-781	4068
7590	10/23/2003		EXAMINER RAMSEY, KENNETH J	
Duane Morris 1667 K Street N W Suite 700 Washington, DC 20006			ART UNIT 2879	PAPER NUMBER

DATE MAILED: 10/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/597,549

Applicant(s)

SULCS ET AL

Examiner

Kenneth J. Ramsey

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 8-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-12 and 14-31 is/are rejected.
- 7) ☒ Claim(s) 13 and 32 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Non-Prior Art Rejections*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2 and 3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. No antecedent is found for "the pinch seal" in line 3 of each claim. Claim 2, line 3, "doe" is a clear typographical error.

Claim 10 is objected to do to the phrase "with a the flattened portion" in line 2.

### Prior Art Rejections

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-6, 8-12, 14-16 and 18-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ahlgren et al 4,891,555 (Ahlgren) in view of Kowalczyk et al 5,525,863 (Kowalczyk). Ahlgren et al teaches the basic blow molding process for forming an arc lamp as recited in Claim 1, steps (a) through (e), (g) and (h). See column 8, lines 68. The only difference between Ahlgren and claim 1 is the recitation of step (f) which merely differs from Ahlgren by the recitation of a flattened portion at the longitudinal center of the mold chamber. However, Ahlgren column 8, lines 49-58

states that the lamp body may have any predetermined shape which can be "spherical, elliptical, tubular or any other desired type determined by the parameters of the various lamps to be described." As well known in the blow molding process, "The desired shaped is obtained by the preselection of the inner shape of the mold." (column 2, lines 56-58 of Ahlgren). At issue is whether or not it would be obvious to one of ordinary skill in the art to configure inner shape of the mold with a flattened portion, i.e., to form the arc lamp body with a flattened portion in the longitudinal center, such as claimed in step (f) of Claim 1. The examiner notes that the prior art taught that the flattened shape is desirable for at least two reasons that are made obvious by Kowalczyk. A first reason of providing the flattened portion is to reduce the temperature differences about the wall of the arc lamp by moving the bottom wall, which is normally cooler since heat rises, closer to the arc discharge. See the discussion of U.S. patent 5,016,150 (Gordin) at column 2, lines 31-49 of Kowalczyk. A second reason for providing the flattened portion as claimed is to prevent the pooling of condensed lamp fill material which is disclosed by Kowalczyk, column 5, lines 10-20 to be undesirable since it is more difficult to vaporize material that is pooled together. Therefore, since the bottom of the lamp bulb of Ahlgren, figure 8, tends to form a pool of condensed lamp fill due to the same being cooler and due to the effects of gravity, it would have been obvious to one of ordinary skill in the art at the time of applicants' invention to flatten the bottom of the arc lamp of figure 8 in order to (1) raise the temperature of this portion of the bulb as taught at column 2, lines 31-49 of Kowalczyk and (2) spread out any condensation so that it can be more readily vaporized as taught at column 5, lines 10-20 of Kowalczyk since it

is difficult to vaporized a lamp fill that is pooled due to the effects of condensation and gravity.

3. The examiner notes applicants' argument that Kowalczyk teaches away from the disclosure of U.S. patent 5,016,150 (Gordin) since the method of flattening the bottom wall portion in Gordin had a defect in that it also resulted in the movement of a portion of the wall at the arrow point of the radius line  $R_A$ , figure 2b, away from the arc discharge to create another cold spot in the arc tube. However, it would have been obvious to one of ordinary skill in the art at the time of applicants' invention to that the flattening of the the middle bottom portion of the mold in Ahlgren to raise the temperature of this portion of the lamp and to spread out any condensed matter as made obvious by Kowalczyk does not have the defect of forming another cold spot as in Gordin. See for example, column 7, lines 29-40, of Kowalczyk wherein the flattening of the bottom of the mold in Kowalczyk raises the temperature of the corresponding arc tube wall and disperses the condensate without creating undesired cold spots elsewhere. In fact any cold spot can obviously be removed by filling in the corresponding portion of the mold without increasing the radius of the arc lamp in another spot unlike the method used in Gordin.

4. As to the recitations of the other claims, the following comments are made. With respect to claims 2 and 3, the drawings show an arc tube having the claimed ratio of bulb to end tube diameters and moreover it would have been obvious to one of ordinary skill to make the tube portions with a small diameter to increase the area available for illumination. Since the claimed steps are clearly suggested it is immaterial that they are intended to facilitate a later step of pinch sealing which is not claimed. As to claim 4, in Ahlgren, the ratio of the maximum mold height to the mold width would not change from

unity upon the flattening of the mold to spread out the pool of condensed lamp fill. As to claims 8, 10, 11, 12, 23, 24 and 26, the mold and tube of Ahlgren are horizontally disposed. The mold has a single plane of symmetry, it would have been obvious to one of ordinary skill in the art to position the plane of symmetry in a vertical plane, e.g. with flattened portion of the mold in the top of the mold since the tube would not have to be expanded upwards against the pull of gravity to contact the mold as far as needed to contact the lower portion and the forces of gravity would be symmetrical and would assist in obtaining a even thickness about the symmetrical shape. As to claims 5, 6, 19-22, the flattening of the top of mold of Ahlgren would also meet these limitations. As to claims 9 and 25-30, it is well known to split a mold on its horizontal plane to save floor space. As to claims 14-16, the lamp of Ahlgren generally meets these conditions. As to claim 31, flattening the top of the mold would result in a mold cavity that is an upside down canoe-shaped.

5. Claims 1-3 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ahlgren et al 4,891,555 (Ahlgren) and Kowalczyk et al 5,525,863 (Kowalczyk) as above applied to claim 1 and further in view of Heider et al 5,138,227 (Heider). Claims 2-3 and 17 further indicate that the bulb-shape formed by claim 1 is employed in a process that forms pinch seals at each end. Heider teaches a high-pressure halide lamp having an ellipsoidal shaped bulb portion intermediate tubular end portions of reduced diameter as in Ahlgren that are pinched sealed. Therefore it would have been obvious to one of ordinary skill in the art at the time of applicants' invention to seal the ends of the bulb of Ahlgren as modified above with pinch seals as in Heider since the end shape can be predetermined to remove cold spots in the end portions as taught by Kowalczyk.

### **Allowable Subject Matter**

Claims 13 and 32 are objected to but would be allowed if made self-contained. Claim 13 is allowable since the prior art does not show or suggest the step of flattening the mold cavity over a length comprising 50 to 60 percent of the length of the mold cavity. Claim 32 is allowable since it is not suggested to form a V-shape bottom.

### ***Response to Arguments***

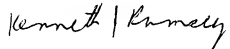
6. Applicants argue that if it was obvious to employ a blow molding process as in Ahlgren to solve the problem of non-uniform temperatures with respect to the teaching of Gordin 5,016,150 would have been obvious to one of ordinary skill in the art, than such a fact would have been noted in the Kowalczyk patent which first noted the problems concerning the Gordin process. However, it is not seen that Kowalczyk was interested in providing a process of forming a blow-molded non-tubular arc lamp but on the contrary was interested in using a tubular lamp shape to reduce costs. Therefore since Kowalczyk claimed an alternative process to "solve" the problem noted with respect to Gordin, there was no incentive to disclose that another but unpatentable solution was also available. However, although the teaching of Kowalczyk may well have been suitable for the disclosed purposes, it would have been obvious to one of ordinary skill in the art in view of the above teachings (1) that the requirement of a cylindrical shape for the arc tube is too confining if one is to achieved the benefit of an arc tube without significant cold spots and pooling of the lamp fill, and (2) that the best arc tube shape can be readily obtained by blow molding the entire bulb shape as stated in the above rejections.

7. Importantly, as stated in Ahlgren, the blow molding process was suitable for forming any desirable arc tube shape. At the time of applicants' invention, even before the teaching of Kowalczyk as indicated therein at column 2, it was known in the prior art that an arc tube with a flattened bottom was a desirable shape. Therefore, at the time of applicants' invention, it was clearly obvious for one of ordinary skill in the art to form the arc lamp of Ahlgren with a flattened bottom. Further to employ pinch seals was well known and obvious as shown by Heider and Kowalczyk.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth J. Ramsey whose telephone number is 308-2324. The examiner can normally be reached on M-F from 9 to 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel, can be reached on (703) 305-4794. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306



**KENNETH J. RAMSEY  
PRIMARY EXAMINER**